

Blue

Work Order ID 55777

February 1, 2010 10:22:17 AM



Page 1

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

R

Date: *10/20*

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D2650	Rev F
-------	-------

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels per PPP D206-642-441

CHG002

N/A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 2

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110



Skidtubes

0.00

Skidtubes

Memo

0.00

1-Deburr Fwd edge of tube

2-Remove ridge on inside of Fwd edge of tubeas per Dwg D2650

3-Weld Fwd Cap as per Dwg D2650. Use aluminum rod. Grind D2647 to fit as required.

A/R 111 Aluminum Rod: m112507/m113207

4-Grind weld flush to cap on top surface only.

5-Cut aft end 138.60" from front of tube

6-Drill pilot holes using drill jig DT8025 & DT8169 (A,B,C,D). Open to Ø0.312".

7-Drill holes for wearplates using DT 8028-7. Open to Ø 0.297".

8-Open using #6 Drill Bit

9-Open holes for Tow Ring to Ø0.625" as per Dwg D2650, D2650-7 Drilling Detail

10-Remove inner indexing ridge on aft end of skidtubeas per Dwg D2650

11-Deburr and Blow out all chips form inside the tube

BE 10/02/02

BE 10/02/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 3

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

115



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

2) S 10/02/03

0.00

116



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

2) S 10/02/03

0.00

120



HandFinish

Hand Finishing

Chemical Conversion Coat per QSI005 4.1

0.00

0.00

1

BE 10/02/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 4

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date: _____

Tooling: _____

Date: _____

Run Start



QC:

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center ID

130

Operation
Description

QC3- Inspect Part Finish

Set Up/
Run Hours

0.00

Draw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

QC

Quality Control

Memo

0.00

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 5

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140



Skidtubes

0.00

Skidtubes

Memo

0.00

1-Open holes to finished size as per Dwg D2650, D2650-7 Drilling Detail
(without cutting fluid)

2-Countersink crossbolt spacer holes as per Dwg D2650(without cutting fluid)

3-Deburr. Blow out chips. Grind alodine off around crossbolt spacer.

4-Bond D2654-7 web in place as per QSI 015Ensure holes line upAllow 12 Hrs.
cure time before cuttingStart Date: 10/02/03Time: 10:00Finish Date: 10/02/03Time: 10:24Time: 8:53 AMA/R Sikaflex-291 M112429Sikaflex expiry date: 08/2010

2
3 BE10/02/03

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 6

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC5- Inspect part completeness to step on W/O

0.00

S vol2/04

QC

Memo

0.00

160

Skidtubes

Skidtubes

0.00

Memo

0.00

Skidtubes

1-Prep per QSI 005 and Insert cross bolt spacers D2649. Weld as per QSI 004 and Dwg D2650. Remember to back drill each hole to 0.25" before welding the other side. Use aluminum rod.

A/R Aluminum Rod

2-Grind welds flush as per Dwg D2650.

3-Counterbore 5/16" x 0.750" deep as per Dwg D2650 Deburr



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 7

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

170



HandFinishing

0.00



10-2-10

Skidtubes

Skidtubes

Memo

0.00

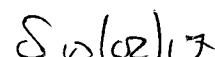
Install D2680-041 Nut Plate as per Dwg D2650

180



QC10- Inspect visual per QSI004- ground welds

0.00



QC

Quality Control

Memo

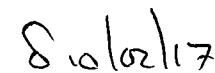
0.00

190



QC5- Inspect part completeness to step on W/O

0.00



QC

Quality Control

Memo

0.00



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 8

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start



QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

200



HandFinish

Hand Finishing

Pressure Wash per QSI005 4.3

0.00

BK 10-02-17

①

210



Powdercoat

Powder Coating

205 spray paint white Gloss(Ref.4.3.5.1) per QSI005 4.3 Alum

0.00

B 110918

M 10 02 23(1)

Memo

prime grey per QSI005 0.00
print Delfleet B hire B 113171
OVEN TEMPERATURE: 112V Delfleet B 113314
FINISH TIME:

220



QC

Quality Control

QC- Inspect Part Finish

0.00

Memo

0.00

BK 10-02-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 9

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230



HandFinishing

0.00

10/03/01

X1

9

HandFinish

Memo

0.00

1-Install inserts & wearpads as per dwg D2922. Use a drop of Sikaflex inside
insert holes before installing wearpad/wearplate.A/R Sikaflex-291 11/17/39 Sikaflex expiry date: 10/012-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install
plugs as per Dwg D2650. Clean excess adhesive

3-Install MS27039-4-06 Screw as per DEO 9153

4-Inspect for foreign object per QSI 024

5-Install D2646 Aft Cap and seal with SikaflexClean excess adhesive

A/R Sikaflex-291 11/17/39 Sikaflex expiry date: 10/016-Wing Walk as per Dwg D2650-7 and QSI 005 4.4Batch: 11/13/462

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 55777

Page 10

February 1, 2010 10:22:17 AM

Item ID: D206-642-441

Accept



Setup

Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 2/02/10 Start Qty: 1.00



Cust Item ID:

Required Date: 2/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

240



QC

Quality Control

Operation
Description

QC5- Inspect part completeness to step on W/O

Set Up/
Run Hours

0.00

Draw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

10/03/02

10/03/02

250



Packaging

Packaging

0.00

0.00

10/03/02

Packaging

Memo

Identify and pack for shipping as per PPP D206-642-441

Location:

PPP Rev:

10/03/02

260



Quality Control

QC21- Final Inspection - Work Order Release

0.00

Memo

0.00

10/03/02
MF
10-3-5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:22:21 AM

Page 1

10

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM
IPP Rev:I 08-05-01 add QC3 DD verified by:EC
IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ D2620	Replacement Skidtube, 206 Skidtube	Mfg/ Manufactured	Bin No	Primary Last	Route 110	Unit of Each	Qty on 17.0000	Remaining 1.0000	Qty Barcode	Date	Status
-----------------------------	---------------------------------------	----------------------	-----------	-----------------	--------------	-----------------	-------------------	---------------------	----------------	------	--------

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	17
54448	7
55559	10

1 02/02/02

D2646	Manufactured	No	110	Each	58.0000	1.0000	Barcode
-------	--------------	----	-----	------	---------	--------	---------

Warehouse Loc Qty Loc Code

Location

Main Warehouse

FP6	29
52663	29

Main Warehouse

fp7	13
52663	13

x1 16/03/01

Main Warehouse

ST	16
46327	4
48109	12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:22:21 AM

Page 2

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM
 IPP Rev:I 08-05-01 add QC3 DD verified by:EC
 IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ D2647	Replacement	Mfg/ Manufactured	Bin	Primary No	Last	Route 140	Unit of Each	Qty on 93.0000	Remaining 1.0000	Qty	Date	Status
-----------------------------	-------------	----------------------	-----	---------------	------	--------------	-----------------	-------------------	---------------------	-----	------	--------

Cap

Warehouse Location Loc Qty Loc Code

Main Warehouse

D2654-7



Manufactured No

ST

55352

160

93

93

Each

2.0000 1.0000

1

86

10/02/02

Web

Warehouse Location Loc Qty Loc Code

Main Warehouse

CCR264SS3-3



Purchased No

FG

52801

170

2

2

Each

41.0000 2.0000

255801

① BE 10/02/03

Cherry Rivet

Warehouse Location Loc Qty Loc Code

Main Warehouse

ST

111548

41

20

111827

1

112314

2

113539

18

M13973

②

③

10-2-16

February 1, 2010 10:22:21 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 3

February 1, 2010 10:22:21 AM

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 105.10.11 Added D3429-1 per CHG002 KJ/CP/JLM

Start Qty: 1.00

Required Qty: 1.00

IPP Rev:I 08-05-01 add QC3 DD verified by:EC

IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Component Item ID/ D2649	Replacement	Mfg/ Manufactured	Bin No	Primary	Last	Route	Unit of Each	Qty on 337.0000	Remaining 23.0000	Qty	Date	Status
						170						

Cross Bolt Spacer

Warehouse Loc Qty Loc Code

Location

Main Warehouse

LG	310	
51529	3	
55000	307	

30 26 10/02/04

Main Warehouse

ST	27	
36013	5	
47112	18	
48271	4	

D2680-041



Manufactured No

170 Each 57.0000 1.0000



Nut Plate

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST021	57	
33061	1	
55366	56	

(i)

10-2-8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 4

February 1, 2010 10:22:21 AM

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM
IPP Rev:I 08-05-01 add QC3 DD verified by:EC
IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/ Purchased	Bin	Primary	Last	Route	Unit of Each	Qty on 2,253.000	Remaining 60.0000	Qty	Date	Status
ALS4-1032-130				No		230						

Insert

AN960JD10L	Purchased	No	<u>Warehouse</u>		Loc Qty	<u>Loc Code</u>
			<u>Location</u>			
			Main Warehouse			
			ST		2253	

110511

2253

2253

X60 M 10103101

AN960JD10L



Washer

AN960JD416	Purchased	No	<u>Warehouse</u>		Loc Qty	<u>Loc Code</u>
			<u>Location</u>			
			Main Warehouse			
			ST		3815	
			101291		16	
			105793		49	
			110985		3750	
			230		Each	
					0.0000	1.0000

101291

105793

110985

3750

3815

16

49

3750

0.0000

1.0000

</

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 5

February 1, 2010 10:22:21 AM

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM
IPP Rev:I 08-05-01 add QC3 DD verified by:EC
IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/ Purchased	Bin	Primary No	Last	Route	Unit of Each	Qty on 250.0000	Remaining 2.0000	Qty	Date	Status
CR3212-4-03						230						



Cherry Rivet

Warehouse

Location

Main Warehouse

ST

Loc Qty

111359

Loc Code

112314

250

2

10-28

D2651-1



Manufactured No

111359

230

84

166

Each

2

504.0000 22.0000



Plug

Warehouse

Location

Main Warehouse

fpa

Loc Qty

53349

Loc Code

295

X22 M 10/03/01

Main Warehouse

ST

43990

209

51530

18

191

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 6

February 1, 2010 10:22:21 AM

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM

Start Qty: 1.00

Required Qty: 1.00

IPP Rev:I 08-05-01 add QC3 DD verified by:EC

IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Component Item ID/ D2651-3	Replacement	Mfg/ Manufactured	Bin	Primary No	Last	Route	Unit of Each	Qty on 693.0000	Remaining 22.0000	Qty	Date	Status
						230						

O-Ring

D3535-15	Manufactured	No	<u>Warehouse</u>		Loc Qty	<u>Loc Code</u>
			<u>Location</u>	Main Warehouse		
			ST		693	
			43849		3	
			46114		690	
			230	Each	15.0000	1.0000

Wearshoe

D3535-23	Manufactured	No	<u>Warehouse</u>		Loc Qty	<u>Loc Code</u>
			<u>Location</u>	Main Warehouse		
			ST		15	
			30750		4	
			42233		1	
			53462		10	
			230	Each	10.0000	1.0000

Wearshoe

			<u>Warehouse</u>		Loc Qty	<u>Loc Code</u>
			<u>Location</u>	Main Warehouse		
			ST		10	
			53467		10	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

February 1, 2010 10:22:21 AM

Page 7

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM
IPP Rev:I 08-05-01 add QC3 DD verified by:EC
IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ D3535-37	Replacement	Mfg/ Manufactured	Bin	Primary No	Last	Route 230	Unit of Each	Qty on 8.0000	Remaining 1.0000	Qty	Date	Status

Wearshoe



Warehouse

Location

Main Warehouse

FP

51654

Loc Qty

Loc Code

8

8

230 Each 13.0000 1.0000

x1 M 10103100

D3536-15



Manufactured No

Warehouse

Location

Main Warehouse

ST

51600

Loc Qty

Loc Code

13

13

x1 M 10103100

Gasket

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 8

February 1, 2010 10:22:21 AM

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM
IPP Rev:I 08-05-01 add QC3 DD verified by:EC
IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/	Replacement	Mfg/ Manufactured	Bin	Primary No	Last	Route	Unit of Each	Qty on 16.0000	Remaining 1.0000	Qty	Date	Status
D3536-23						230						



Gasket

Warehouse

Location

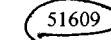
Main Warehouse

FP

Loc Qty

Loc Code

3

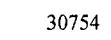


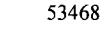
X1 M1 W03601

Main Warehouse

ST

13





D3536-37



Manufactured No

230

Each

10.0000 1.0000



Gasket

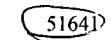
Warehouse

Location

Main Warehouse

ST

10



X1 M1 03601

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 9

February 1, 2010 10:22:21 AM

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM

Start Qty: 1.00

Required Qty: 1.00

IPP Rev:I 08-05-01 add QC3 DD verified by:EC

IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Component Item ID/	Replacement	Mfg/ Manufactured	Bin	Primary No	Last	Route	Unit of Each	Qty on 118.0000	Remaining 6.0000	Qty	Date	Status
D3537-1						230						



Wearpad

Warehouse

Location

Main Warehouse

FP 2

48288 2

Main Warehouse

FP17 116

51678 16

51679 100

D3537-3 Manufactured No 230 Each 39.0000 1.0000



Wearpad

xle M 10/03/01

Warehouse

Location

Main Warehouse

ST 39

33881 6

35697 33

xle M 10/03/01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 10

February 1, 2010 10:22:21 AM

Work Order ID: 55777



Parent Item: D206-642-441



Parent Item Name: Replacement Skidtube

Start Date: 2/02/10

Required Date: 2/19/10

Comments: IPP Rev:H 05.10.11 Added D3429-1 per CHG002 KJ/CP/JLM
IPP Rev:I 08-05-01 add QC3 DD verified by:EC
IPP Rev:J 08-09-29 revF as per dwg DD verified by:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ MS27039-1-08	Replacement Purchased	Mfg/ Purchased	Bin No	Primary Last	Route 230	Unit of Each	Qty on 2,482.000	Remaining 2.0000	Qty	Date	Status

Screw

Warehouse

Location

Main Warehouse

ST	2482
110467	3
110552	479
110835	2000

XZ M 10/03/01

MS27039-4-06

Purchased

No

230

Each

52.0000 1.0000

Screw

Warehouse

Location

Main Warehouse

ST	52
109061	52

Y1 M 10/03/01

MS27039C1-08

Purchased

No

230

Each

482.0000 60.0000

SCREW

Warehouse

Location

Main Warehouse

ST	482
19185	482

X60 M 10/03/01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

QTY -1	QTY -3	QTY -5	QTY -7	PART NUMBER	DESCRIPTION
X				D2650-1	SKIDTUBE ASSEMBLY
	X			D2650-3	SKIDTUBE ASSEMBLY
		X		D2650-5	SKIDTUBE ASSEMBLY
			X	D2650-7	SKIDTUBE ASSEMBLY
1	1	1	1	D2600-1-160	EXTRUSION
1				D2654-1	WEB
	1			D2654-3	WEB
		1		D2654-5	WEB
			1	D2654-7	WEB
1	1	1	1	D2646	AFT CAP
1	1	1	1	D2647	CAP
17	18	19	23	D2649	CROSS BOLT SPACER
16	18	14	22	D2651-1	PLUG
16	18	14	22	D2651-3	O-RING
1	1	1	1	D2680-041	NUT PLATE
2	2			D3286-1	DOUBLER
2	2			D3286-3	STUD
42	44	54	60	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, ALS7-1032-130)
2	2	2	2	AN960JD10L	WASHER
2	2	2	2	CCR264SS3-3	RIVET
2	2	2	2	CR3212-4-03	RIVET
2	2	2	2	MS27039-1-08	SCREW
1	1	1	1	MS27039-4-06	SCREW
1	1	1	1	AN960JD416	WASHER
52	52			CR3212-4-04	RIVET

F

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
 - BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/291 ADHESIVE PER DART QSI 015
- 11) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)
- 12) DRILL Ø0.297 FOR ALS7-1032-130 INSERTS USING TEMPLATE DT8056-1 ON -1 TUBE, DT8056-3 ON -3 TUBE, DT8056-5 ON -5 TUBE, AND DT8056-7 ON -7 TUBE. INSTALL INSERTS AFTER FINISH.
- 13) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

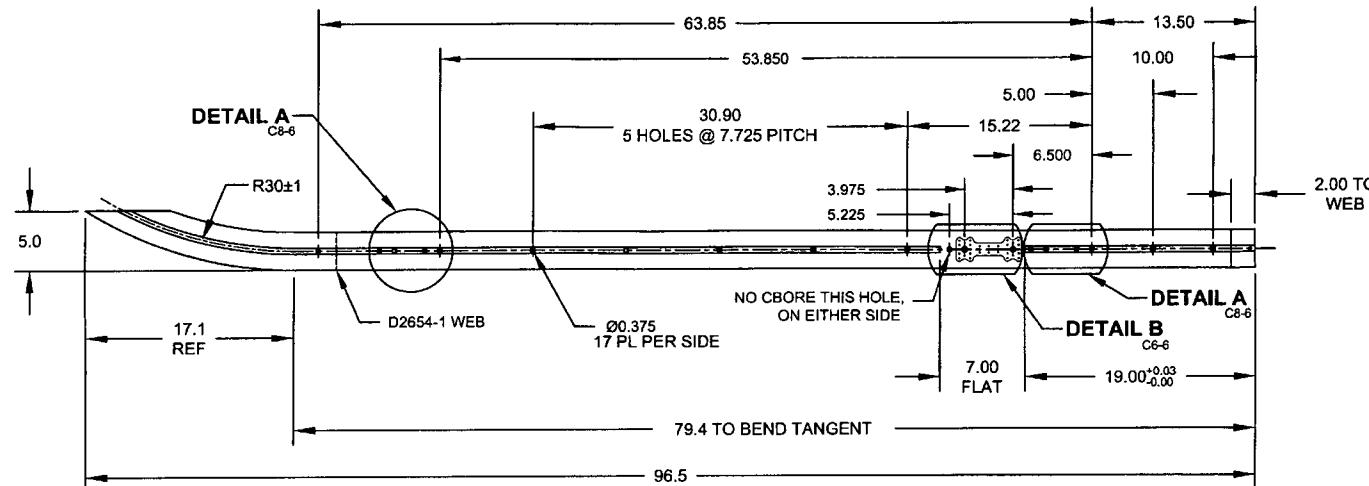
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

NO. 355727

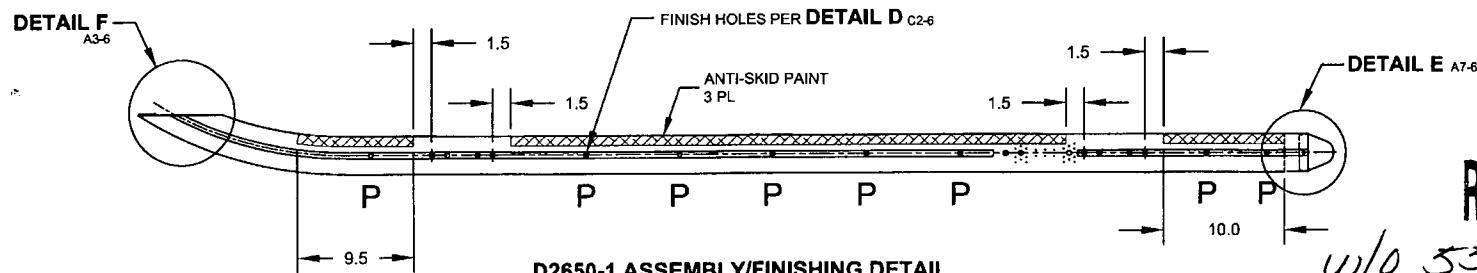
BY 10-2-01

RELEASED
08-07-23

F	DRAWING UPDATED TO CURRENT STANDARDS. SHT 6 ADDED. ALL SECTION AND DETAIL VIEWS TRANSFERRED TO SHT 6. SHT 1 IN PL PART D2649 QTY UPDATED. SHT 6 SECT C-C GRIND INSTRUCTIONS DELETED FROM NOTE 7 (SEE NCR 239).	AJS	08.08.08
E	REMOVE CBORE, CHG DRILL, ADD CHAMFER	CP	06.03.30
D	REDRAW; INCCR. DEO9136/9153/9163 MOD GROUND HANDLING ON D2650-1/-3	CP	04.05.17
C	CHANGE HOLE PATTERN AND FRONT END	DS	97.10.29
B	AS MANUFACTURED CHANGES	DS	97.06.26
A	NEW ISSUE	DS	97.03.25
REV.	DESCRIPTION	BY	DATE
	DART AEROSPACE USA, INC PORT HADLOCK, WA		
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 1 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY OTHER PURPOSE THAN THAT FOR WHICH IT WAS PROVIDED. REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED WITHOUT THE WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



D2650-1 BENDING/DRILLING DETAIL

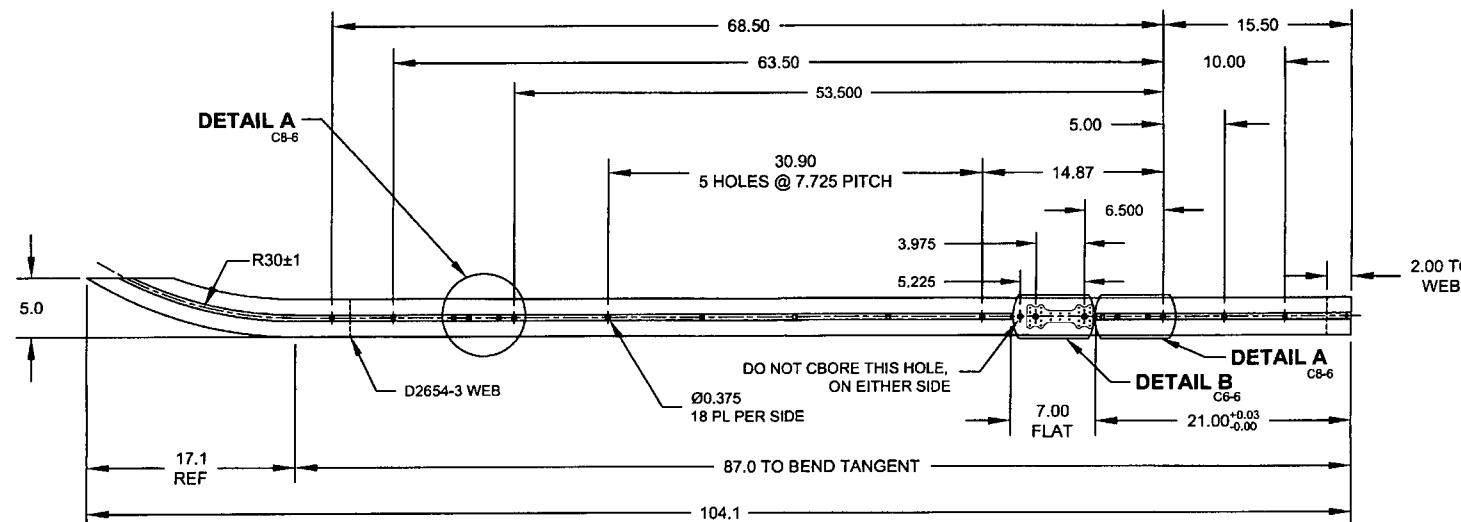


D2650-1 ASSEMBLY/FINISHING DETAIL

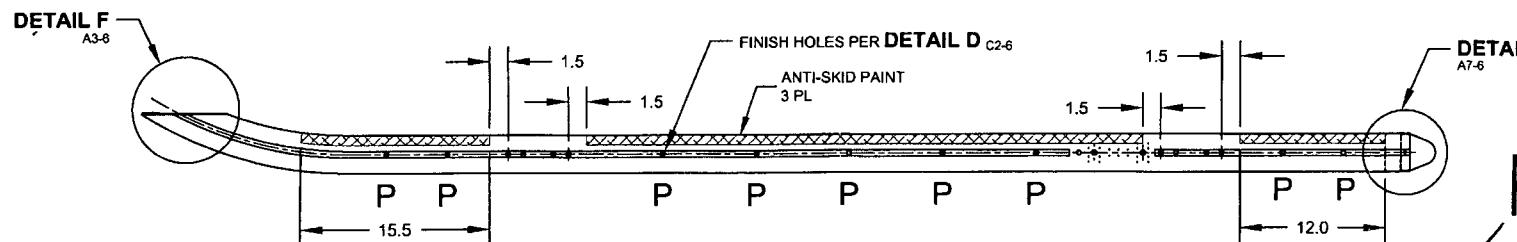
RELEASED
08-09-22 11:11

WFO 55777

DESIGN	DS	DART AEROSPACE USA, INC		
DRAWN	AJS	PORT HADLOCK, WA		
CHECKED		DRAWING NO.	REV. F	
MFG. APPR.		D2650	SHEET 2 OF 6	
APPROVED		TITLE	SCALE	
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS	
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY OTHER PURPOSE OR DISCLOSED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE, USA, INC.		



D2650-3 BENDING/DRILLING DETAIL



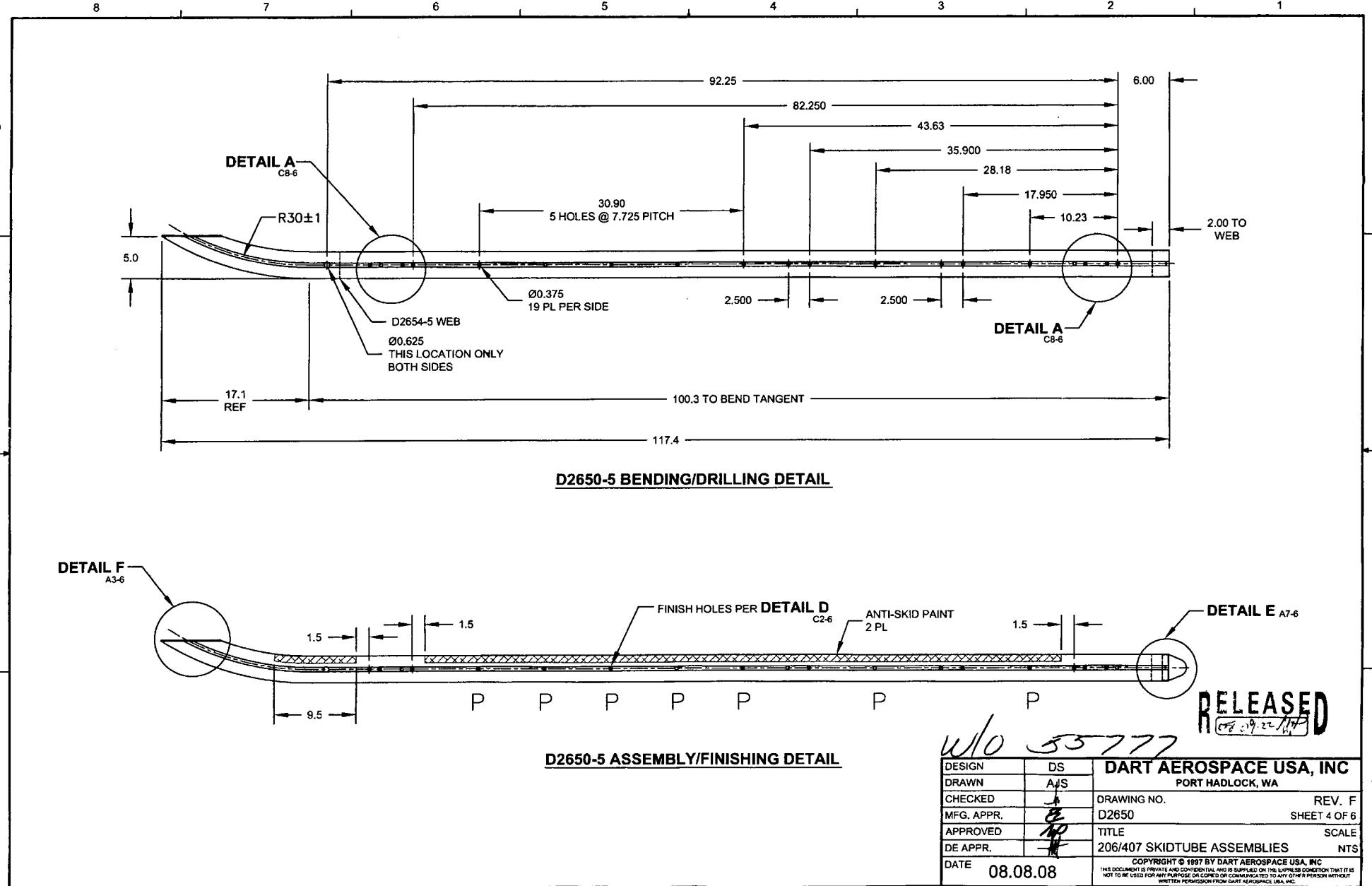
D2650-3 ASSEMBLY/FINISHING DETAIL

RELEASED
05-07-2021 11:19

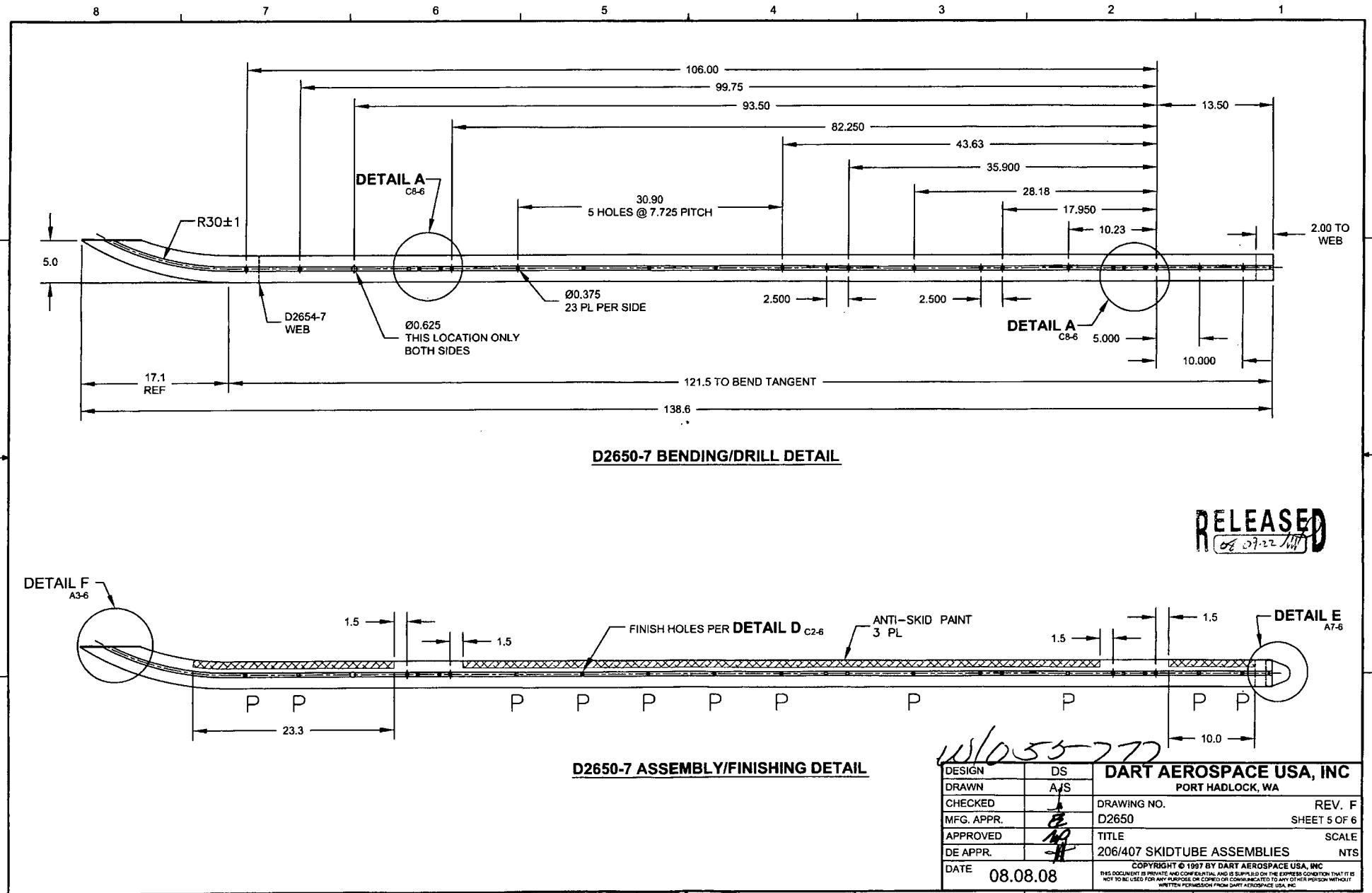
4/6 35777

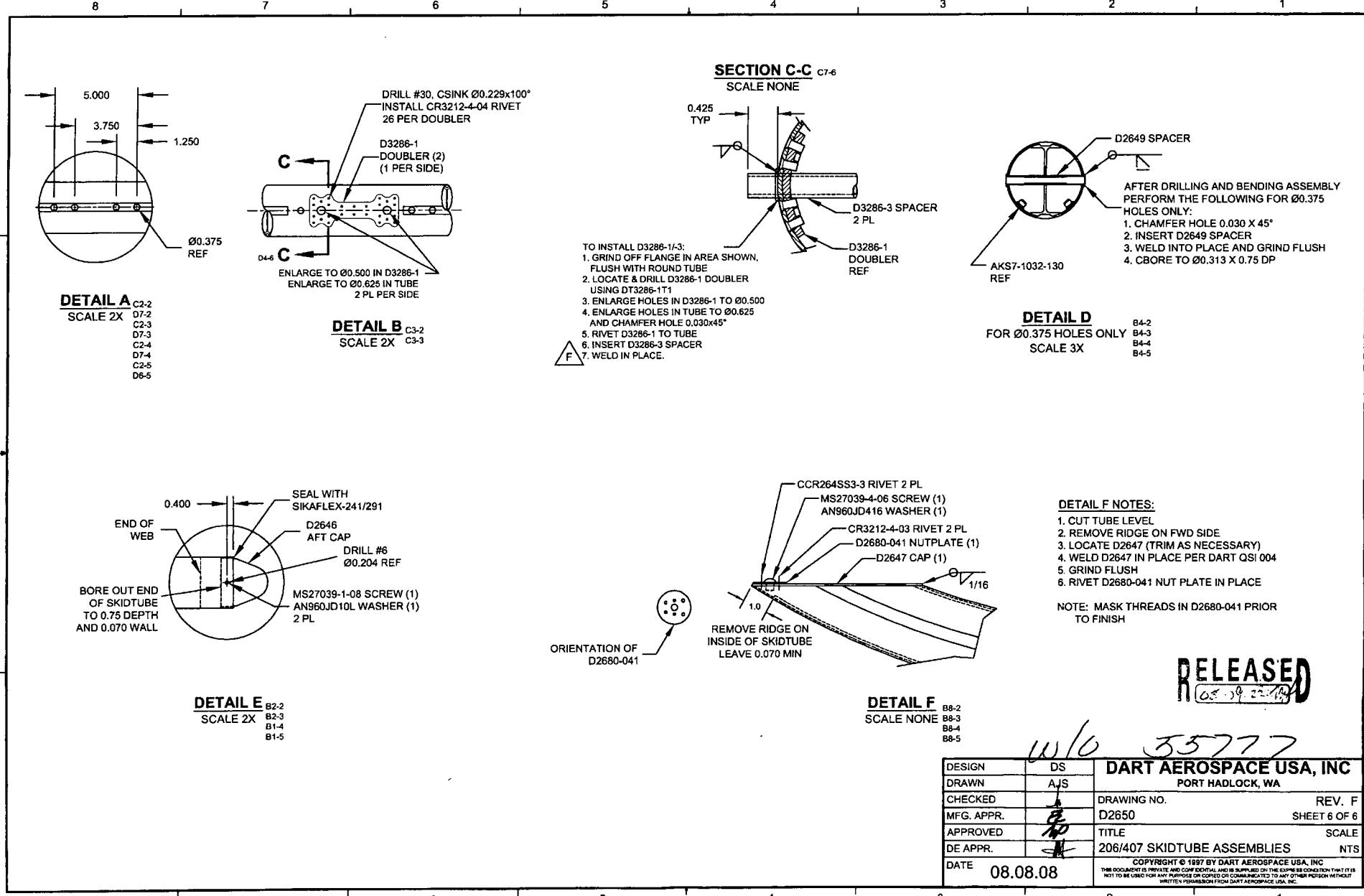
DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 3 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1987 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT	

COPYRIGHT © 1987 BY DART AEROSPACE USA, INC
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON AN EXPRESS CONDITION THAT IT IS
NOT TO BE USED FOR ANY PURPOSE OR COMMENCED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN APPROVAL FROM DART AEROSPACE USA, INC.



DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.	EE	D2650	SHEET 4 OF 6
APPROVED	PP	TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE AND IS NOT TO BE COPIED OR DISCLOSED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	





RELEASED
08-08-22-14

W/0 35777

NO. 223

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: J-55777
Part number: 0306-642-441
Description: 206 skid tube
Welding Process: Tig[] Mig[]
Base material: Aluminum
Current: AC[] DC[]

TEST REQUIREMENTS AND RESULTS

Visual: pass[] fail[]
Penetration: pass[] fail[]

UNACCEPTABLE

Cracks: pass[] fail[]
Undercut: pass[] fail[]
Pin holes: pass[] fail[]
Overlap (cold lap) pass[] fail[]
Porosity (surface): pass[] fail[]
Coloration: pass[] fail[]

Qualifier Barclay Elliott Date of Test Coupon 10-02-16
Welder Barclay Elliott Date of Test Coupon 10-02-16

The above named individual is qualified in accordance with AWS D17.1.2001 to weld